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| EXAMINER | |
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| RUDE, TIMOTHY L | |
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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

Application Number: 09/788,420
Filing Date: 21 February 2001
Appellant(s): Oh Nam KWON, et al.

_____
Valerie P. Hayes
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 25 October 2012.

**(1) Grounds of Rejection to be Reviewed on Appeal**

Every ground of rejection set forth in the Office action dated 09 May 2012 from which the appeal is taken is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

**(2) Response to Argument**

**Appellant argues:** At page 7, Rejection of claims 1-7 and 27 as unpatentable over Applicants' Admitted Prior Art [APA] in view of Tagusa et al [Tagusa] US PAT 6,188,458 is improper.

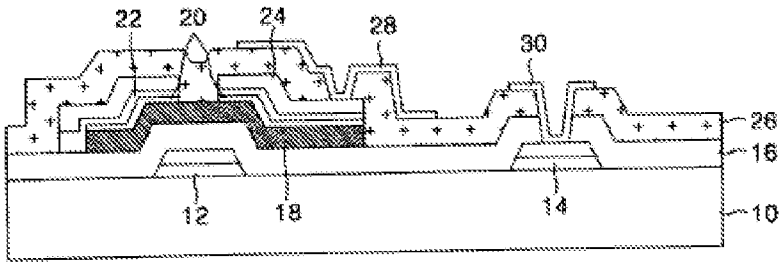
**Examiner Response:** It is respectfully pointed out rejections are considered proper. Regarding Appellant's footnote in the brief, although the Tagusa reference was inadvertently omitted from the statement of rejection, the rationale supporting the rejection clearly identified the Tagusa reference. Accordingly, Appellant was aware of the correct prior art despite the inadvertent lack of proper citation for Tagusa on Pages 3 and 9 of the Final Rejection mailed 09 May 2012. The correct prior art (Tagusa) is cited in the proper Form PTO-892 mailed 20 August 2008, when Tagusa was properly applied.

**Appellant:** At pages 7-8, Appellant provides a copy of Appellant's claim 1 and Appellant argues claim 1 is allowable over APA in view of Tagusa in that claim 1 recites a combination of elements including, for example, "a first plated adhesion conductive layer located only on the area of the third conductive layer exposed by the first contact hole and a second plated adhesion conductive layer located only on the area of the pad layer exposed by the second contact hole...wherein the first and second plated adhesion conductive layers are respectively contained within the first contact hole and in the second contact hole."

**Examiner Response:** The examiner respectfully disagrees. It is respectfully pointed out pages 3-8 of the Final Rejection mailed 09 May 2012 provide a complete and careful item-by-item obviousness rejection of all limitations of claim 1. For convenience, relevant portions of the obviousness rejection of claim 1 are covered below:

As to claim 1, APA discloses a liquid crystal display (LCD) device with much of the relevant structure and structural interrelationships:

FIG. 1E
CONVENTIONAL ART



APA teaches 24B and 14B may include Mo or Cr to improve adhesion per bottom of page 3 of the specification.

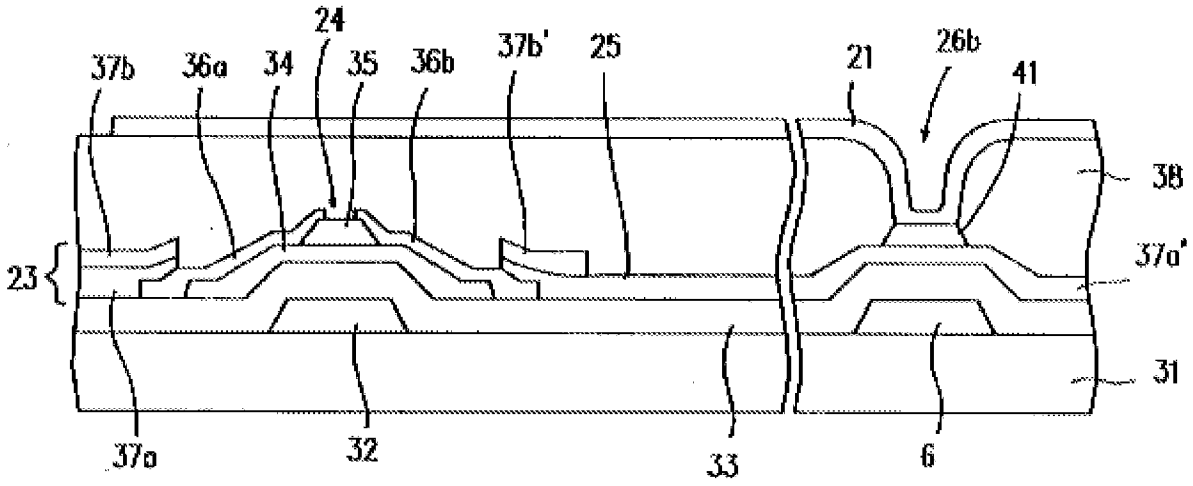
APA does not explicitly disclose an embodiment wherein the first and second adhesion conductive layers are respectively contained within the first contact hole and in the second contact hole.

Tagusa teaches at Figure 5 an embodiment wherein such a metal layer, 41, may be deposited [Applicant's "plated"] such that it is exclusively and entirely contained with the contact hole, 26b

> [hole in element 38, obvious to use at the bottom of all contact holes: Applicant's a first adhesion conductive layer located only on the area of the third conductive layer exposed by the first contact hole and a second adhesion conductive layer located only on the area of the pad layer exposed by the second contact hole on wherein the first adhesion conductive layer is directly contacted with the third conductive layer and the second adhesion conductive layer is directly contacted with the pad layer;],

as an art recognized configuration suitable for the intended purpose of improving adhesion and electrical connectivity of the overlying conductive layer with the underlying conductive layer [col. 12, lines 4-34] which would improve yield and reliability [MPEP 2144.07].

FIG. 5




It should be noted that Appellant seems to argue semantics, e.g., whether the contact hole of the prior art is necessarily two holes rather than one hole, or whether the lower portion of the hole in element 38 of Tagusa (at 26b of Figure 5) is part of a contact hole that reads on Appellant's claimed contact hole, regardless of how it is made.

Examiner considers the whole hourglass-shaped hole in element 38 (at 26b in Figure 5 of Tagusa) to be one hole, and elements 41 and 21 are structurally within that one contact hole.

While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schrieber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed Cir. 1997). See also MPEP 2114. In this case, regardless of possible method of making differences, the resultant structure and structural

interrelationship limitations of claim 1 are rendered obvious by the devices and teachings of APA in view of Tagusa.

**Appellant argues:** At page 9, In the Final Office Action, the Examiner admits that APA "does not explicitly disclose an embodiment wherein the first and second adhesion conductive layers are respectively contained within the first contact hole and in the second contact hole." See Final Office Action at page 5, lines 12-14. The Examiner relies upon Figure 5 of Tagusa to cure the deficient teaching of APA.

Figure 5 of Tagusa clearly, however, shows that the metal nitride layer 41 is formed below the contact hole 26b, as opposed to being contained within the contact hole 26b. In various locations, Tagusa confirms that the metal nitride layer 41 is in fact formed below the contact hole 26b. For example, Tagusa at 3:51-53 discloses that "In one embodiment of the invention, a metal nitride layer is formed below the contact hole to connect the connecting electrode and the pixel electrode (emphasis added). "See also Tagusa at claims 2, 17 and 22.

This is further confirmed by the purpose of Tagusa's invention. Tagusa discloses "after the formation of the contact hole 26b, the cleaning solvent tends to permeate from the contact hole into the interface between the resin and the underlying transparent conductive film, causing the resin film to peel from the transparent conductive film" and "[i]n order to overcome this trouble ... the metal nitride layer 41 .... is formed on the transparent conductive film under the contact hole." Id at 12:16-23. Thus, the purpose of the metal nitride layer 41 in Tagusa, which is formed under each contact hole through

the interlayer insulating film38, is to "improve[] the adhesion between the interlayer insulating film and the underlying film." Id. at 21:14-20. In other words, those of ordinary skill in the art would understand that the metal nitride layer 41 is formed after forming the underlying film 37, but before forming the interlayer insulating film38, to improve their adhesion properties. Indeed, the etch profiles of both the contact hole 26b and the metal nitride layer 41 in Figure 5 of Tagusa clearly indicate this is the case. Because the contact hole 26b is formed by patterning the interlayer insulating film38, the metal nitride layer 41 is formed below the contact hole 26b, not within the contact hole 26b, which is required by claim 1.

**Examiner Response:** It is respectfully pointed out examiner does rely on the teachings of Tagusa in the obviousness rejection of element 41 in/at the bottom of the hole in 38 of Tagusa (please see Figure 5 of Tagusa).

However, it should be recognized that Appellant seems to argue semantics, e.g., whether the contact hole of the prior art is necessarily two holes rather than one hole, or whether the lower portion of the hole in element 38 of Tagusa (at 26b of Figure 5) is part of a contact hole that reads on Appellant's claimed contact hole, regardless of how it is made.

Examiner considers the whole hourglass-shaped hole in element 38 (at 26b in Figure 5 of Tagusa) to be one hole, and elements 41 and 21 are structurally within that one contact hole.

While featrues of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schrieber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed Cir. 1997). See also MPEP 2114. In this case, regardless of possible method of making differences, the resultant structure and structural interrelationship limitations of claim 1 are rendered obvious by the devices and teachings of APA in view of Tagusa.

**Appellant argues:** At page 10, Claims 2-7 and 27 depend from independent claim 1. Accordingly, Appellants respectfully submit that claims 2-7 and 27 are also allowable over the cited references for at least the same reasons set forth with respect to claim 1, and that the rejection of claims 2-7 and 27 under 35 U.S.C. § 103 (a) over APA in view of Tagusa is improper and should be reversed.

**Examiner Response:** It is respectfully pointed out claim 1 is properly rejected with APA in view of Tagusa, so claims 2-7 and 27 are also properly rejected because Appellant offers no argument against the individual rejections on pages 8 and 9 of the Final Rejection mailed 09 May 2012.

**Appellant argues:** At page 10, Claims 29 and 30 depend from independent claim 1. In the Final Office Action, the Examiner cites Song for allegedly teaching "the types of plating for adhesion layers" to reject claims 29 and 30. Thus, the addition of

Song fails to cure the deficient teaching of APA and Tagusa for the same reasons as discussed with respect to claim 1. Accordingly, Appellants respectfully submit that claims 29 and 30 are also allowable over the cited references, and that the rejection of claims 29 and 30 under 35 U.S.C. § 103 (a) over APA in view of Tagusa and Song is improper and should be reversed.

**Examiner Response:** It is respectfully pointed out claim 1 is properly rejected with APA in view of Tagusa, so claims 29 and 30 are also properly rejected because Appellant offers no argument against the individual rejections on pages 9 and 10 of the Final Rejection mailed 09 May 2012.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/TIMOTHY L RUDE/
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Conferees:

/Edward J Glick/
Supervisory Patent Examiner, Art Unit 2871

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